

WHAT IS CLAIMED IS:

1. A light system comprising:  
a light source that includes at least one white light emitting diode (LED)  
5 and multiple color LEDs; and  
a spectral feedback control system configured to detect light that is output  
from the light source and to adjust the light that is output from the light source in  
response to the light detection.
- 10 2. The light system of claim 1 wherein the spectral feedback control system  
is configured to control the color LEDs on a per-color basis.
3. The light system of claim 2 wherein the at least one white LED includes at  
least one phosphor-converted white LED and wherein the color LEDs include red,  
15 green, and blue LEDs.
4. The light system of claim 2 wherein the spectral feedback control system  
further includes a color sensor configured to provide color-specific feedback  
signals for use in controlling the colored LEDs on a per-color basis.  
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5. The light system of claim 4 wherein the at least one white LED is a  
phosphor-converted white LED.
6. The light system of claim 1 wherein the spectral feedback control system  
25 includes a controller configured to control the colored LEDs on a per-color basis  
to maintain luminance and chrominance characteristics of the light that is output  
from the light source.
7. The light system of claim 1 wherein the spectral feedback control system  
30 includes a color sensor configured to provide color-specific feedback signals.

8. The light system of claim 7 wherein the spectral feedback control system includes a controller configured to generate color-specific control signals in response to the color-specific feedback signals.

5 9. The light system of claim 8 wherein the spectral feedback control system includes a driver configured to generate color-specific drive signals in response to the color-specific control signals.

10. The light system of claim 1 wherein the spectral feedback control system includes:

a color sensor configured to provide color-specific feedback signals;  
a controller configured to generate color-specific control signals in response to the color-specific feedback signals; and  
a driver configured to generate color-specific drive signals in response to  
15 the color-specific control signals.

11. A method for operating a light system comprising:  
providing drive signals to a light source that includes at least one phosphor-converted white light emitting diode (LED) and multiple color LEDs;  
20 detecting light that is generated in response to the drive signals;  
generating feedback signals in response to the detected light; and  
adjusting the drive signals that are provided to the light source.

12. The method of claim 11 wherein detecting the light includes generating color-specific feedback signals.  
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13. The method of claim 12 wherein adjusting the drive signals includes adjusting the drive signals for the color LEDs on a per-color basis in response to the color-specific information.  
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14. The method of claim 13 wherein the drive signals for the color LEDs are adjusted to maintain luminance and chrominance characteristics of the detected light.

15. A light system comprising:  
an LCD panel;  
a light source, in optical communication with the LCD panel, which  
includes at least one phosphor-converted white light emitting diode (LED) and  
5 multiple color LEDs; and  
a spectral feedback control system configured to detect light that is output  
from the light source and to adjust the light that is output from the light source in  
response to the light detection.
- 10 16. The LCD backlight system of claim 15 wherein the spectral feedback  
control system is configured to control the color LEDs on a per-color basis.
17. The LCD backlight system of claim 16 wherein the color LEDs include  
red, green, and blue LEDs.
- 15 18. The LCD backlight system of claim 16 wherein the spectral feedback  
control system further includes a color sensor configured to provide color-specific  
feedback signals for use in controlling the color LEDs on a per-color basis.
- 20 19. The LCD backlight system of claim 15 wherein the spectral feedback  
control system includes a controller configured to control the color LEDs on a  
per-color basis to maintain luminance and chrominance characteristics of the light  
that is output from the light source.
- 25 20. The LCD backlight system of claim 15 wherein the spectral feedback  
control system includes:  
a color sensor configured to provide color-specific feedback signals;  
a controller configured to generate color-specific control signals in  
response to the color-specific feedback signals; and  
30 a driver configured to generate color-specific drive signals in response to  
the color-specific control signals.